

first and second transistors 50 and 51 are connected to the positive terminal of the DC power supply DC through the primary coil T1 of the high voltage transformer HVT, and the emitter electrodes thereof are connected to the ground through resistors R7 and R8.

Accordingly, the first and second transistors 50 and 51 are driven in association with the first and second field effect transistors FET1 and FET2. That is, the first and second transistors 50 and 51 are alternately turned on by the first and second pulse signals alternately generated from the first and second pulse output terminals OUT1 and OUT2 of the pulse driving unit VFC2.

In the meantime, the current flowing through the first and second transistors 50 and 51 corresponds to a current flowing in the primary coil T1 of the high voltage transformer HVT in amount. Accordingly, if the amount of current alternately flowing in the primary coil of the high voltage transformer HVT, a voltage level dropped by resistors connected with the first and second transistors 50 and 51 is raised.

A common connection is performed between the emitter of the first transistor 50 and the resistor R7 and between the emitter of the second transistor 51 and the resistor R8, and then connected to the non-inverting input terminal of the operational amplifier 52.

The inverting terminal of the operational amplifier 52 which is an element of an amplification unit of amplifying a current detecting signal is grounded through a resistor R9 and also grounded to the output terminal thereof through another resistor R10.

The operational amplifier 52 amplifies a resultant voltage of the voltages outputted from the respective emitter terminals of the first and second transistors 50 and 51 in

accordance with an amplification rate determined by the voltage division resistors R9 and R10 for an output.

The non-inverting input terminal of a comparator 54 employed for the comparison part is connected to the output terminal of the operational amplifier 52, and the inverting terminal thereof is connected between voltage-dividing resistors R12 and R13 for generating a reference voltage by dividing a voltage of 5V.

FIG 2 shows that an operational amplifier in the pulse driving unit VFC2 is used as the comparator 54 when a commercial integrated circuit having a redundant operational amplifier in addition to a pulse generator is used as the pulse driving unit VFC2. The pulse driving unit VFC2 is adapted to be supplied with a voltage through the door sensing switch DSW from the DC power supply DC, for example, 12V.

In the meantime, if an excessive current detecting signal is generated by the excessive current detecting unit, an excessive current maintaining unit is further included, preferably, to applies the excessive current detecting signal while continuously maintaining the excessive current detecting signal.

The excessive current maintaining unit includes a feedback part.

The feedback part has a third transistor 53 connected to the non-inverting terminal of the comparator 54, a resistor R14, and a diode D1.

The base electrode of the third transistor 53 is connected to a feedback terminal FB of the pulse driving unit VFC2. The emitter electrode of the third transistor 53 is connected to the earth through the resistor R14 and connected to the non-inverting terminal of the comparator 54 through the diode D1.

Here, if the pulse driving unit VFC2 generates a comparison result signal corresponding to a result that a voltage exceeding the reference voltage from the comparator 54 is detected, the outputs of the first and second pulse signals from the first and second pulse output terminals OUT1 and OUT2 are stopped. At the same time, the pulse driving unit VFC2 continuously generates a feedback control signal which turns the third transistor 53 on through the feedback terminal FB.

Therefore, the third transistor 53 maintains the turning-on state by inputting through the base electrode thereof the feedback control signal continuously outputted from the pulse driving unit VFC2, and the feedback signal outputted through the diode D1 is inputted to the comparator 54 as a voltage exceeding the reference voltage induced in the inverting terminal of the comparator 54.

Hereinafter, the operations of the driving circuit of a microwave oven according to the second embodiment of the present invention will be described in detail.

First of all, if the door sensing switch DSW is switched on, the pulse driving unit VFC2 is driven with an input of a DC voltage of 12V through the voltage terminal Vcc. The driven pulse driving unit VFC2 generates the first and second pulse signals having the alternate pulse periods to each other through the first and second pulse output terminals OUT1 and OUT2.

At this time, the first and second field effect transistors FET1 and FET2 are alternately turned on by the first and second pulse signals outputted from the pulse driving unit VFC2. Therefore, as described above, an AC voltage is applied to the primary coil T1 of